

Card 1/1 : Pub. 153 - 4/28

Author : Bogoroditskiy, N. P., and Vorobey, Z. F.

Title : Problem on the nonlinearity of the volt-ampere characteristics of silicon-carbide resistors

Periodical : Zhur. tekhn. fiz. 24, 811-817, May 1954

Abstract : Investigate various silicon-carbide powers for a definite degree of their compression without any binder. Show that the greater the electrical conductivity of the system consisting of a set of silicon-carbide granules in a weak field the earlier its growth sets in under increasing voltage. The electrical conductivity in a strong field varies according to the Frenkel law derived theoretically for dielectrics and semiconductors. The coefficient of nonlinearity is not constant, but depends on the range of the field strength.

Institution : ---

Submitted : December 2, 1952

Card 1/1 : Pub. 153 -2/28

Author : Fedorenko, N. V.

Title : Single scattering of positive ions in a gas

Periodical : Zhur. tekhn. fiz. 24, 784-796, May 1954

Abstract : Investigates the single scattering of positive ions accelerated by 5 to 30 kilovolts, in hydrogen, helium, neon, nitrogen, argon and krypton for angles, 2.5° to 15° . with a magnetic ion analyzer. Presents data on scattering without charge variation for single-charge atomic ions He^+ , N^+ , ect. The number of scattered ions quickly falls with increasing angle of declination. For a unique energy in the zone of small angles the heaviers are scattered more strongly. Establishes that the scattering of the molecular ions N_2^+ , H_2^+ , H_3^+ at angles greater than 2.5° is accompanied by dissociation; the scattering of Ar^{++} , by electron capture. Thanks V. M. Dukel'skiy for his advice and I.P. Skal-skaya for her mathematical computations.

Submitted : February 17, 1954

Declassified and Approved For Release @ 50-Yr 2013/12/05 : CIA-RDP81-00706R000100120002-6
USSR/Physics - Rectifying selenium contact FD-566

Card 1/1 : Pub. 153 - 6/28

Author : Bel'skiy, A. F., and Blum A.I.

Title : Investigation of the rectifying properties of Se - HgSe

Periodical : Zhur. tekhn. fiz. 24, 826-832, May 1954

Abstract : Investigate the rectifying properties of the system consisting of a lower electrode of Se - HgSe and an upper electrode as a function of 1) the method of effectuation of the Se - HgSe contact, 2) the method of application of selenium and its crystallization, 3) the material of the lower and upper electrodes, and 4) purity of the selenium.

Institution : --

Submitted : November 23, 1953

Declassified and Approved For Release @ 50-Yr 2013/12/05 : CIA-RDP81-00706R000100120002-6
USSR/Electronics - Conductivity of selenium

FD-568

Card 1/1 : Pub. 153 - 8/28

Author : Shidlovskiy, M. K.

Title : Electrical conductivity of amorphous selenium in strong electrical fields

Periodical : Zhur tekhn. fiz. 24, 837-844, May 1954

Abstract : Presents results of measurements on the electrical conductivity of amorphous selenium for field strength from 200 to 180,000 v/cm and at temperatures from - 35 to 50°C. Establishes that the dependence of the conductivity, as computed for a steady current taking into account the emf of the high-voltage polarization or for an initial current (for 0.001 sec.), upon the field strength agrees well with the Frankel formula in fields up to 100-120 kc/cm. Thanks Prof. D. N. Nasledov, who proposed this subject and offered advice.

Declassified and Approved For Release @ 50-Yr 2013/12/05 : CIA-RDP81-00706R000100120002-6
USSR/Electronics - Rupture strength

FD-570

Card 1/1 : Pub. 153-10/28
Author : Vorob'yev, A. A.
Title : Electrical strength according to the various crystallographic directions
Periodical : Zhur. tekhn. fiz. 24, 848-859, May 1954
Abstract : Describes experiments on the measurement of the dependence of the electrical strength upon crystallographic direction, conducted by the authors in 1937 (Izv. tomsk. politekh. inst. 63, 3, 1944). Bring his results up to date. Describe these.
Institution :
Submitted : December 9, 1952

Declassified and Approved For Release @ 50-Yr 2013/12/05 : CIA-RDP81-00706R000100120002-6
USSR/Physics - Moisture of dispersives FD-572

Card 1/1 Pub. 153-12/28

Author : Yershov, V. N., AND Yershova, N. M.

Title : An express method for determining the moisture of capillary-porous
 dispersive materials.

Periodical : Zhur. tekhn. fiz. 24, 854-858, May 1954

Abstract : Find a new criterion for the moisture content of capillary-porous
 dispersive materials, that permits one to reduce this quantity to an
 electrical parameter. Describe a practical device for such a study.
 Refer to related works of A. F. Chudhovskiy (ZhTF, 8, No 11, 1938;
 Sbornik Trudov AFI, No 5, 1952, and No 6, 1953).

Institution :

Submitted : June 16, 1953

Card 1/1 Pub. 153-16/28

Author : Bryzzhev, L. D., and Timov, V. N.

Title : Simple tuning-fork quartz clock

Periodical : Zhur. tekhn. fiz. 24, 879-883, May 1954

Abstract : Describe simple quartz clocks operating on the basis of a piezoquartz tuning fork with a frequency of 1000 cycles/sec. In addition to the second impulses the device gives frequencies of 100 and 1000 cycles at the output. The daily variation in the behavior of the clock is about ± 0.002 second, which corresponds to a relative change of frequency of $\pm 2 \cdot 10^{-8}$.

Institution :

Submitted : May 15, 1953

Declassified and Approved For Release @ 50-Yr 2013/12/05 : CIA-RDP81-00706R000100120002-6
USSR/Physics - Plasma sounding

FD-578

Card 1/1 Pub. 153-18/28

Author : Kagan, Yu. M., and Perel', V. I.

Title : Theory of sounding in plasma. I

Periodical : Zhur. tekhn. fiz. 24, 889-894, May 1954

Abstract : Derive expressions for the electric flow toward a spherical sounding probe for the case of a potential in space in terms of the concentration of electrons in a nondisturbed plasma. The formulas obtained contain an explicit dependence on the pressure and on the size of the sounding probe. Thanks Prof. S. E. Frish, Corr. Mem Acad. Sci USSR, and Prof. L. E. Gurevich for their evaluation of results.

Institution :

Submitted : November 9, 1953

Declassified and Approved For Release @ 50-Yr 2013/12/05 : CIA-RDP81-00706R000100120002-6
USSR/Metals - Heat regenerator theory FD-580

Card 1/1 Pub. 153-20/28

Author : Gol'dfarb, E. M.

Title : Accumulation of heat under periodically repeated heating and cooling

Periodical : Zhur. tekhn. fiz. 24, 899-906, May 1954

Abstract : Discusses the mathematical theory of heat exchange in regenerators, which has still been insufficiently studied inspite of their wide-spread use in industry. Solves by operational methods. Thanks Prof. I. D. Semikin, who posed this subject. Reference: I. D. Semikin, "Principles of regenerator theory." Metallugicheskiye Pechi [Metallurgical Furnaces], edited by M. A. Glinkov, 1951.

Institution :

Submitted : September 8, 1953

USSR/Physics - Glass heating

FD-583

Card 1/1 Pub. 153-23/28

Author : Indenbom, V. L.

Title : Theory of the heating of glass

Periodical : Zhur. Tekh. fiz. 24, 925-928, May 1954

Abstract : Studies the case of large temperature drops in glass when part is in the plastic state and part in the elastic state, as occurs during the heat treatment of glass. Finds the dependence of residual stress upon rate of cooling at various temperatures. Thanks Prof. G. M. Bartenev. Refer to related works of G. M. Bartenev, in *Steklo i Keramika* [Glass and Ceramics], and I. I. Kitaygorodskiy's book *Steklo i Steklovareniye*, 1950, Moscow.

Institution :

Submitted : December 2, 1953

Declassified and Approved For Release @ 50-Yr 2013/12/05 : CIA-RDP81-00706R000100120002-6
USSR/Physics - Thermodynamics, criticism

FD-584

Card 1/1 Pub. 153-24/28

Author : Kirillin, V. A., and Rubinshteyn, Ya. M.

Title : Concerning an ignorant article on dynamics

Periodical : Zhur tekhn. fiz 24, 929-932

Abstract : Claims that Ye. M Kharitonchik's article "Processes and cycles with decreasing entropy and their significance for natural science and technology" is essentially erroneous and can only confuse the inexperienced reader. This article appeared in the Sbornik trudov po zemledel'cheskoy mekhanike [Symposium of work on agriculturreal mechanics], published 1952 under the editorship of Acad. V. A. Zhelegovskiy, of All-Union Academy of Agricultural Sciences imeni V. I. Lenin.

Institution :

Submitted : September 18, 1953

Declassified and Approved For Release @ 50-Yr 2013/12/05 : CIA-RDP81-00706R000100120002-6

USSR, Metals - Temperature measurement of metal cutters

FD-586

Card 1/1 Pub. 153-26/28

Author : Avakov, A. A.

Title : Local heating of cutters for the case of calibration of "natural" thermocouples

Periodical : Zhur. Tekh. fiz. 24, 941-942, May 1954

Abstract : A letter to the editor. Recommends his new procedure for calibrating and measuring the cutting temperatures of cutters, as opposed to the deficient method of "natural" thermocouples recently proposed.

Institution :

Submitted : September 18, 1953

Declassified and Approved For Release @ 50-Yr 2013/12/05 : CIA-RDP81-00706R000100120002-6

Card 1/1 Pub. 153-28/28

Author : Anonymous

Title : Bibliography of recent literature

Periodical : Zhur. tekhn. fiz. 24, 944-959, May 1954

Abstract : Bibliography of 600 scientific articles in recent issues of 48 physics and engineering journals (9 USSR, 9 German, 2 French, remainder English-language) received by the Science Library of the Leningrad Physicotechnical Institute, Acad Sci USSR. 18 subject headings: acoustics, solids, structure, high polymers, dielectrics, metals, semiconductors, gas discharge, electronics, magnetism, radio, optics, electron optics, aerohydrodynamics, thermophysics, low temperatures, laboratory techniques, nuclear physics laboratory techniques. (no USSR articles under last heading).

Institution :

Submitted :

USSR/Physics - Thermodynamics

Card 1/1 : Pub 153-2/22

Author : Kalafati, D. D.

Title : Region of water and ice melting in the s - T diagram.

Periodical : Zhur. tekhn. fiz., 24, 184-192, Feb 1954

Abstract : Analyzes the diagram s - T, i.e. isobars of water-vapor, at various temperatures and pressures up to 400 atm. for application in steam turbines. Tables and graphs. 10 references, including 3 foreign.

Institution :

Submitted : September 1, 1953

Card 1/1 : Pub 153-4/22

Author : Volkenshteyn, V. S.

Title : Method for determining the thermal characteristics of materials. II

Periodical : Zhur. tekhn. fiz., 24, 200-204, Feb 1954

Abstract : Described in his previous work ("Rapid method for determining the thermal characteristics of poor heat conductors," Zhur. tekhn. fiz., 22, No 6, 1952) a method requiring a certain time interval. Generalizes previous method to measure thin layers and good heat conductors. One quoted reference.

Institution :

Submitted : December 11, 1952

USSR/Metals - Austenite conversion

FD-594

Card 1/1 : Pub 153-6/22

Author : Gulayev, A. P., and Zalkin, V. M.

Title : Effect of heating speed on the position of the temperature interval of conversion of pearlite into austenite

Periodical : Zhur. tekh. fiz. 24, 216-221, Feb 1954

Abstract : Analyze the effect of heating speed on the position of the "critical point" i.e. the point of quickest conversion of pearlite into austenite. Assume that the accuracy of the experimental determination of temperature interval depends on the inertia of the recording equipment and on the temperature scale and sensitivity of the oscillograph. Results are plotted in graphs. 9 references.

Institution :

Submitted : June 28, 1953

Declassified and Approved For Release @ 50-Yr 2013/12/05 : CIA-RDP81-00706R000100120002-6
USSR/Metals - Fatigue damage

FD-596

Card 1/1 : Pub 153-8/22

Author : Pavlov, Z. P.

Title : Method for the determination of cumulative fatigue from curves of equal damage

Periodical : Zhur. tekhn. fiz., 24, No 2, 227-230, Feb 1954

Abstract : Analyzes the most widely used method by Richart and Newmark (A Hypothesis for the Determination of Cumulative Damage in Fatigue). Finds it inappropriate to use, because of errors introduced and cumbersomeness. 1 reference.

Institution :

Submitted : September 1, 1953 .

USSR/Metals - Weakening

FD-598

Card 1/1 : Pub 153-10/22

Author : Bulygin, I. P. and Lashko, N. F.

Title : Theory of weakening of metals during the process of plastic deformation. II. Weakening of aging aluminum alloy

Periodical : Zhur. tekhn. fiz. 24, 241-249, Feb 1954

Abstract : In continuation of preceding article (see preceding abstract), the authors study the non-recrystallizing weakening of unstable alloys of a supersaturated solid solution in which at a certain temperature the weakening due to the decomposition of the solid solution is augmented by the weakening after hardening. Tests of AK4 showed 3 stages of weakening: deformation, shear stress starting at creeping, and weakening characterized by diffusion. 3 references.

Institution :

Submitted : June 12, 1953

Card 1/1 : Pub 153-12/22

Author : Tsukkerman, I. I.

Title : Theory of Electron Optic Systems with an arbitrarily curved axis

Periodical : Zhur. tekhn. fiz., 24, 258-273, Feb 1954

Abstract : Analyzes some theoretical problems of electron optics with arbitrarily curved axis on the basis of the general theory of the focusing effect of static electromagnetic fields, established by G. A. Grinberg (DAN, 37, 5-6, 197, No 9, 295 (1942); 38, No 2-3, 89 (1943); ZhTF, 13, 361, (1943); Izbrannyye voprosy matematicheskoy teorii elektricheskikh i magnitnykh yavleniy, (Selected problems in the math. theory of electric and magnetic phenomena) 1948). Solves the problem of finding fields that form focusing systems with curved axis satisfying specified properties. 15 references, includ 5 foreign.

Institution :

Submitted : June 6, 1953